

# Northwestern Journal of Law & Social Policy

---

Volume 5 | Issue 1

Article 7

---

Spring 2010

## Fall-Out: New York v. United States and the Low-Level Radioactive Waste Problem

Samantha Dreilinger

---

### Recommended Citation

Samantha Dreilinger, *Fall-Out: New York v. United States and the Low-Level Radioactive Waste Problem*, 5 Nw. J. L. & Soc. Pol'y. 183 (2010).  
<http://scholarlycommons.law.northwestern.edu/njlsp/vol5/iss1/7>

This Note or Comment is brought to you for free and open access by Northwestern University School of Law Scholarly Commons. It has been accepted for inclusion in Northwestern Journal of Law & Social Policy by an authorized administrator of Northwestern University School of Law Scholarly Commons.

# Fall-Out: *New York v. United States* and the Low-Level Radioactive Waste Problem

Samantha Dreilinger\*

## I. INTRODUCTION

¶1 For over thirty years, the United States has failed to solve its low-level radioactive waste problem.<sup>1</sup> Working independently, state governments have not developed a single new disposal site for low-level radioactive waste.<sup>2</sup> Congress' best efforts to address the growing quantities of waste included passing a law that, in part, required states to accept responsibility for all low-level radioactive waste.<sup>3</sup> Unsurprisingly, most states opposed this provision and were relieved when the Supreme Court deemed it unconstitutional in *New York v. United States*.<sup>4</sup> As the states and the federal government remain at an impasse, low-level radioactive waste accumulates in countless makeshift storage facilities across the country.<sup>5</sup>

¶2 The road to *New York* began in 1985 when Congress passed the Low-Level Radioactive Waste Policy Amendments Act (Amendments Act).<sup>6</sup> The Amendments Act put forward a series of incentives and penalties that Congress believed would persuade states to develop disposal sites.<sup>7</sup> The most severe and controversial penalty was the "take-title" provision, under which a state that failed to develop or secure access to a

---

\* Juris Doctor Candidate, 2010, Northwestern University School of Law. I would like to thank the editors of the *Northwestern Journal of Law and Social Policy* for their invaluable assistance in preparing this Article for publication. I would also like to thank David Dreilinger for his love, support, and insightful comments on each draft.

<sup>1</sup> Although low-level radioactive waste is only one of many types of radioactive waste produced in the United States, it constitutes eighty-five percent of the volume and creates a majority of the disposal problems. See Jane Chuang, *Who Should Win the Garbage Wars? Lessons from the Low-Level Radioactive Waste Policy Act*, 72 FORDHAM L. REV. 2403, 2433, 2456 (2004) (discussing the emergence of the low-level radioactive crisis in the 1970s; the legislation, passed in 1980, that tried to address it; and later stating that no new low-level radioactive waste disposal sites have been developed).

<sup>2</sup> *Id.* at 2455.

<sup>3</sup> "Accepting responsibility," otherwise known as "taking-title," forces states to take possession of the low-level radioactive waste and accept legal liability in the case of any of accident, leakage, or storage problem. See Linda Greenhouse, *Supreme Court Roundup; High Court Eases States' Obligation Over Toxic Waste*, N.Y. TIMES, June 20, 1992, at 1.

<sup>4</sup> *New York v. United States*, 505 U.S. 144 (1992).

<sup>5</sup> These private storage facilities lack the oversight and safety precautions of an official disposal site. William F. Newberry, *The Rise and Fall and Rise and Fall of American Public Policy on Disposal of Low-Level Radioactive Waste*, 3 S.C. ENVTL. L.J. 43, 43 (1993). For example, 191 generators of LLRW in New York stored 319,803 cubic meters of low-level radioactive waste in undisclosed locations in 2008. See N.Y. STATE ENERGY RESEARCH AND DEV. AGENCY, N.Y. STATE LOW-LEVEL RADIOACTIVE WASTE STATUS REPORT FOR 2008, at 17, 18 (2009) [hereinafter N.Y. STATE LOW-LEVEL RADIOACTIVE WASTE STATUS REPORT], available at [http://www.nyserda.org/Energy\\_Information/llrw%202008-rev.pdf](http://www.nyserda.org/Energy_Information/llrw%202008-rev.pdf).

<sup>6</sup> Low-Level Radioactive Waste Policy Amendments Act (Amendments Act) of 1985, 42 U.S.C. § 2021(b)-(j) (2006).

<sup>7</sup> Chuang, *supra* note 1, at 2436.

disposal site by January 1, 1996, would be forced to accept legal ownership and liability for all of its low-level radioactive waste.<sup>8</sup>

¶3 In the early 1990s, it was clear that the states and the federal government were heading toward a confrontation. The Amendment Act's deadline was rapidly approaching, yet community opposition and legal challenges had prevented states from beginning the lengthy process required to develop disposal sites.<sup>9</sup> Faced with accepting legal responsibility for thousands of feet of privately-generated low-level radioactive waste, one state challenged the constitutionality of the Amendments Act: New York.<sup>10</sup>

¶4 New York's challenge culminated in *New York v. United States*.<sup>11</sup> In *New York*, the Supreme Court struck down the take-title provision of the Amendments Act.<sup>12</sup> According to Justice O'Connor, the take-title provision was inconsistent with the Constitution's division of authority between federal and state governments because it would "'commandeer' state governments into the service of federal regulatory purposes."<sup>13</sup>

¶5 *New York* is widely considered to be one of the Rehnquist Court's most important decisions, as well as one of Justice O'Connor's most influential opinions.<sup>14</sup> The *New York* decision is also credited with setting the limits on the affirmative powers granted by Commerce Clause,<sup>15</sup> reinvigorating the Tenth Amendment,<sup>16</sup> and signaling the resurgence of dual federalism.<sup>17</sup> *New York* is a seminal decision, cited in cases dealing with issues as far-reaching as products liability,<sup>18</sup> assisted suicide,<sup>19</sup> gun control,<sup>20</sup> and gambling on Native American Reservations.<sup>21</sup> Unfortunately, the *New York* decision did not solve the United States' low-level radioactive waste problem. Not a single state has

<sup>8</sup> 42 U.S.C. § 2021e(d)(2)(C).

<sup>9</sup> Richard C. Kearney, *Low-Level Radioactive Waste Management: Environmental Policy, Federalism, and New York*, 23 PUBLIUS 57, 62 (1993).

<sup>10</sup> *Id.* at 66.

<sup>11</sup> *New York v. United States*, 505 U.S. 144 (1992).

<sup>12</sup> *Id.* at 188.

<sup>13</sup> *Id.* at 175.

<sup>14</sup> See, e.g., Erin Ryan, *Federalism at the Cathedral: Property Rules, Liability Rules, and Inalienability Rules in Tenth Amendment Infrastructure*, 81 U. COLO. L. REV. 1, 39 (2010) (discussing how the *New York* decision made "legal history"); Mark Latham, *The Rehnquist Court and the Pollution Control Cases: Anti-Environmental and Pro-Business?*, 10 U. PA. J. CONST. L. 133, 144 (2007) (discussing how *New York* was one important case, among others, that signaled the reemergence of federalism as a powerful constitutional doctrine in the Court).

<sup>15</sup> See John C. Yoo & Jennifer L. Koester, *Judicial Safeguards of Federalism and the Environment: Yucca Mountain from a Constitutional Perspective*, 75 U. COLO. L. REV. 1317, 1323–27 (2004) (underlying the *New York* opinion was an understanding that the Framers explicitly rejected a system in which the government would regulate the states directly).

<sup>16</sup> See Erin Ryan, *Federalism and the Tug of War Within: Seeking Checks and Balance in the Interjurisdictional Gray Area*, 66 MD. L. REV. 503, 565 (2007) (explaining that *New York* was one of the first "New Federalism Tenth Amendment" cases defining the Tenth Amendment as a simple rule against the federal commandeering of state apparatuses).

<sup>17</sup> Erwin Chemerinsky, *Empowering States When It Matters*, 69 BROOK. L. REV. 1313, 1328–29 (2004).

<sup>18</sup> *Robinson v. Hartzell Propeller Inc.*, 326 F. Supp. 2d 631, 669 (E.D. Pa. 2004).

<sup>19</sup> *Schiavo ex rel. Schindler v. Schiavo*, 404 F.3d 1270, 1276 (11th Cir. 2005).

<sup>20</sup> *City of New York v. Beretta U.S.A. Corp.*, 524 F.3d 384, 396–97 (2d Cir. 2008).

<sup>21</sup> *Seminole Tribe of Fla. v. Florida*, 517 U.S. 44, 61 n.10 (1996).

developed a new low-level radioactive waste disposal site,<sup>22</sup> leading some to view the opinion as “‘good federalism but bad public policy.’”<sup>23</sup>

¶16 In fact, in the almost twenty years since the *New York* decision, the United States’ low-level radioactive waste problem has become increasingly dire. Between 1999 and 2003, the production of low-level radioactive waste increased by 200%.<sup>24</sup> Yet, disposal capabilities remained static. Without progress in the past two decades and with no solution on the horizon, the United States’ low-level radioactive waste problem has been silently, but steadily, coming to a head.<sup>25</sup>

¶17 This Comment will reintroduce the problem of low-level radioactive waste and emphasize the pressing need for a comprehensive solution. It will trace the history of low-level radioactive waste in the United States and the problems that led to the Amendments Act. This Comment will then discuss the *New York* decision and its impact on the current low-level radioactive waste disposal process. It will show that without an immediate, workable solution, the low-level radioactive waste problem will become progressively worse. The Comment concludes by offering a solution to the United States’ low-level radioactive waste problem through a federal-state power sharing arrangement derived, ironically, from *New York*, the very case that exacerbated the dimensions of low-level radioactive waste disposal.

## II. WHAT IS LOW-LEVEL RADIOACTIVE WASTE?

¶18 Radioactive waste is generated from a variety of sources: the U.S. military’s nuclear weapons program, commercial nuclear power plants, medical applications, and corporate and university-based research programs.<sup>26</sup> Low-level radioactive waste represents eighty-five percent of all radioactive waste produced in the United States.<sup>27</sup> Low-level radioactive waste is created when materials come into contact with radioactive material or are exposed to neutron radiation.<sup>28</sup> This waste typically includes items used at research facilities, such as the clothing worn by researchers, protective shoe covers, rags, mops, and filters.<sup>29</sup> Tools and materials contaminated in the course of research, such as luminous dials, medical tubes, swabs, injection needles, syringes, laboratory

<sup>22</sup> Kearney, *supra* note 9, at 62.

<sup>23</sup> *Id.* at 57 (quoting unknown commentators).

<sup>24</sup> U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-04-604, LOW-LEVEL RADIOACTIVE WASTE: DISPOSAL AVAILABILITY ADEQUATE IN THE SHORT TERM, BUT OVERSIGHT NEEDED TO IDENTIFY ANY FUTURE SHORTFALLS 13 (June 2004) [hereinafter 2004 GAO REPORT: LOW-LEVEL RADIOACTIVE WASTE], available at <http://www.gao.gov/new.items/d04604.pdf>.

<sup>25</sup> The issue is rarely discussed in policymaking circles or the mainstream press. However, there are a few exceptions. Every three to four years the Government Accountability Office provides a brief update on some aspect of low-level radioactive waste. See, e.g., *id.*; U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-07-221, LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT: APPROACHES USED BY FOREIGN COUNTRIES MAY PROVIDE USEFUL LESSONS FOR MANAGING U.S. RADIOACTIVE WASTE (2007), available at <http://www.gao.gov/new.items/d07221.pdf>.

<sup>26</sup> Richard C. Kearney & John J. Stucker, *Interstate Compacts and the Management of Low-Level Radioactive Wastes*, 45 PUB. ADMIN. REV. 210, 214 (1985).

<sup>27</sup> Chuang, *supra* note 1, at 2432.

<sup>28</sup> See *id.*

<sup>29</sup> U.S. Nuclear Regulatory Commission Website, Low-Level Waste, <http://www.nrc.gov/waste/low-level-waste.html> (last visited Jan. 6, 2009).

animal carcasses, sample tissues, and water used in nuclear reactors, also often become low-level radioactive waste.<sup>30</sup>

¶9 The type of material and concentration of radioactivity dictates the risks associated with each container of low-level radioactive waste.<sup>31</sup> Some low-level radioactive waste, such as the remnants of medical research, poses no significant hazard to humans unless inhaled or consumed.<sup>32</sup> However, other low-level radioactive waste, like water used in nuclear reactors, may be extremely hazardous. Exposure to this type of waste could lead to an increased risk of cancer or even death.<sup>33</sup> The U.S. Nuclear Regulatory Commission (NRC) classifies low-level radioactive waste based on its potential hazards.<sup>34</sup> Although the classification of waste is complex, Class A waste generally contains lower concentrations of radioactive material than Class B or Class C waste.<sup>35</sup>

¶10 Low-level radioactive waste is shipped to a disposal site by the generator in an NRC approved container.<sup>36</sup> The waste, usually still in the shipping container, is then disposed of through a “shallow burial system” comprised of specially-engineered trenches laying under several feet of soil.<sup>37</sup> The container remains in these trenches until it deteriorates to safe levels of radioactivity, usually twenty to thirty years.<sup>38</sup> In 2006, the United States disposed of approximately four million cubic feet of radioactive waste.<sup>39</sup>

¶11 Currently, there are only three operational low-level radioactive waste disposal sites in the United States. The first site, in Barnwell, South Carolina, opened in 1971.<sup>40</sup> Barnwell is licensed to accept Classes A, B, and C radioactive waste.<sup>41</sup> Between the 1970s and 2008, Barnwell accepted low-level radioactive waste from all generators. In 2008, Barnwell restricted access to those generators in Connecticut, New Jersey, and South Carolina, members of the Atlantic Compact.<sup>42</sup>

¶12 The second facility, located in Richland, Washington, opened in 1965.<sup>43</sup> The Richland site is licensed to accept Class A, B, and C low-level radioactive waste.<sup>44</sup> Like the Atlantic Compact, in 1985 the Richland site limited access to generators in Alaska,

<sup>30</sup> Kearney & Stucker, *supra* note 26, at 214.

<sup>31</sup> U.S. NUCLEAR REG. COMM’N, RADIOACTIVE WASTE: PRODUCTION, STORAGE, DISPOSAL 24 (2002) [hereinafter U.S. NUCLEAR REG. COMM’N, RADIOACTIVE WASTE], *available at* <http://www.nrc.gov/reading-rm/doc-collections/nuregs/brochures/br0216/r2/br0216r2.pdf>.

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.* at 20.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at 25.

<sup>37</sup> Chuang, *supra* note 1, at 2433.

<sup>38</sup> Kearney & Stucker, *supra* note 26, at 214.

<sup>39</sup> U.S. Nuclear Regulatory Commission Website, Low-Level Waste Disposal Statistics, <http://www.nrc.gov/waste/llw-disposal/statistics.html> (last visited Jan. 8, 2009).

<sup>40</sup> Michael B. Gerrard, *Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis*, 68 TUL. L. REV. 1047, 1081 (1994).

<sup>41</sup> S.C. Energy Office Website, Radioactive Waste Disposal Program, <http://www.energy.sc.gov/index.aspx?m=8>, (last visited Jan. 14, 2009).

<sup>42</sup> *Id.* The Atlantic Compact is one of several interstate compacts formed around low-level radioactive waste disposal. *See generally* U.S. Nuclear Regulatory Commission Website, Low-Level Waste Disposal, <http://www.nrc.gov/waste/llw-disposal/licensing/locations.html> (last visited Feb. 8, 2010) (discussing the unique elements of each of the interstate compacts).

<sup>43</sup> Gerrard, *supra* note 40, at 1081.

<sup>44</sup> U.S. Nuclear Regulatory Commission Website, Locations of Low-Level Waste Disposal Facilities, <http://www.nrc.gov/waste/llw-disposal/licensing/locations.html> (last visited Feb. 8, 2010).

Hawaii, Idaho, Montana, Oregon, Utah, Washington, Wyoming, Colorado, Nevada, and New Mexico, members of the Northwest and Rocky Mountain Interstate Compacts.<sup>45</sup>

¶13 The third low-level radioactive waste disposal site is located in Clive, Utah. The Clive site is only licensed to accept Class A waste, the least radioactive type of low-level radioactive waste.<sup>46</sup> Unlike the Barnwell or Richland sites, which are operated in partnership with the state governments of South Carolina and Washington, the Clive site is privately owned and operated. The Clive site is also the only low-level radioactive waste disposal facility that has not restricted access to members of specific interstate compacts.<sup>47</sup>

¶14 Although the Clive site did not start accepting low-level radioactive waste until 1988, it should not be considered a “new” site.<sup>48</sup> Prior to receiving a license to dispose of low-level radioactive waste, the Clive site was a “Hazardous Industrial Zone.”<sup>49</sup> With two hazardous waste incinerators and a hazardous waste landfill already on the premises, the company did not have to go through the lengthy siting process or negotiations with the state or local communities to develop an additional low-level radioactive waste disposal site.<sup>50</sup>

### III. EARLY REGULATION, 1950–1980

¶15 Radioactive waste did not accumulate in substantial quantities until after World War II, when nuclear scientists applied the technology developed for the atomic bomb to civilian uses such as nuclear power, industrial research, and medical innovation.<sup>51</sup> At first there was no government regulation of low-level radioactive waste; generators simply dumped it into the ocean.<sup>52</sup> In the 1950s, the National Academy of Sciences and the Atomic Energy Commission published a study that investigated the environmental impact of ocean dumping.<sup>53</sup> In response, Congress passed the Atomic Energy Act of 1954 (AEA).<sup>54</sup> The AEA provided the federal government the authority to fully regulate all phases of the nuclear fuel cycle from mining to processing to storage and, finally, to disposal of all by-products including low-level radioactive waste.<sup>55</sup> Although the AEA

<sup>45</sup> Washington State Department of Ecology Website, Nuclear Waste, Non-Hanford Work, <http://www.ecy.wa.gov/programs/nwp/llrw/llrw.htm> (last visited Jan. 14, 2009). For information on the Rocky Mountain Compact, see generally U.S. Nuclear Regulatory Commission Website, Low-Level Waste Disposal, <http://www.nrc.gov/waste/llw-disposal.html> (last visited Nov. 22, 2009).

<sup>46</sup> Chuang, *supra* note 1, at 2454.

<sup>47</sup> See U.S. Nuclear Regulatory Commission Website, Locations of Low-Level Waste Disposal Facilities, <http://www.nrc.gov/waste/llw-disposal/licensing/locations.html> (last visited Feb. 8, 2010) (discussing the three operating LLRW disposal sites, with only Clive identified as “accepting waste from all regions”).

<sup>48</sup> M.R. Ledoux & M.S. Cade, Licensing and Operation of the Clive, Utah Low-Level Radioactive Containerized Waste Disposal Facility—A Continuation of Excellence (paper presented at the Waste Management Conference, Feb. 22–24, 2002, Tucson, Ariz.) (on file with Merrill-Cazier Library, Utah State University), *available at* <http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1002&context=govdocs>.

<sup>49</sup> *Id.* at 2.

<sup>50</sup> *Id.*

<sup>51</sup> Chuang, *supra* note 1, at 2432.

<sup>52</sup> Kearney & Stucker, *supra* note 26, at 214; Chuang, *supra* note 1, at 2432.

<sup>53</sup> Kearney & Stucker, *supra* note 26, at 214.

<sup>54</sup> Atomic Energy Act of 1954, Pub. L. No. 83-703, 68 Stat. 919 (codified as 42 U.S.C. § 2011 (1976)); see Kearney, *supra* note 9, at 59.

<sup>55</sup> Kearney, *supra* note 9, at 59.

provided a uniform and efficient system, the states wanted input and some control over the location of low-level radioactive waste disposal sites. Congress incorporated these concerns when the AEA was amended in 1959.<sup>56</sup>

¶16 In 1960, pursuant to the AEA, the federal government granted licenses to private companies to develop disposal facilities.<sup>57</sup> The companies could select the location of a disposal site, but were required to receive the approval of state and local government officials before building the facilities.<sup>58</sup> State officials encouraged the development of disposal facilities in order to attract “high-tech” industries—the future of the economy—that they believed would require low-level radioactive waste disposal facilities.<sup>59</sup> In 1961, the first low-level radioactive waste disposal site opened in Beatty, Nevada.<sup>60</sup> Over the next decade, similar arrangements led to five new disposal sites located in Kentucky, Washington, Illinois, New York, and South Carolina.<sup>61</sup> At the time, these six disposal facilities were able to accommodate all of the United States’ low-level radioactive waste.

¶17 Problems arose between 1975 and 1978 when the federal government shut down three of the disposal sites due to poor management. Leaks at the New York and Kentucky sites created pools of radioactive ground water.<sup>62</sup> The Illinois site was closed because the land area reached capacity, and the NRC refused to license space for additional burial.<sup>63</sup> At the same time, highly publicized accidents at nuclear facilities, such as Three-Mile Island,<sup>64</sup> created strong anti-nuclear sentiments that foreclosed any chance a community might allow a new low-level radioactive waste site to be developed.<sup>65</sup>

¶18 By 1979 there were only three operational low-level radioactive waste disposal sites remaining. Only one of these sites, Barnwell, South Carolina, was located near the east coast where the majority of low-level radioactive waste was generated.<sup>66</sup> Low-level radioactive waste is very expensive to transport, and, as a result, Barnwell received eighty to ninety percent of the United States’ low-level radioactive waste.<sup>67</sup> The situation reached a crisis point when, later that year, two of the remaining three sites, Richland, Washington and Beatty, Nevada, were temporarily shut down for improperly handling and packaging of low-level radioactive waste.<sup>68</sup> During this time Barnwell was the only

---

<sup>56</sup> *Id.*

<sup>57</sup> Newberry, *supra* note 5, at 45.

<sup>58</sup> *Id.* at 46.

<sup>59</sup> *Id.*

<sup>60</sup> Kearney & Stucker, *supra* note 26, at 214.

<sup>61</sup> *Id.*

<sup>62</sup> See Chuang, *supra* note 1, at 2433–34 n.304 (discussing how three low-level radioactive waste sites were closed by 1978 due to ground water pooling and radioactive leachate contamination; the locations of these sites, New York, Kentucky, and Illinois are identified in the footnote).

<sup>63</sup> Kearney & Stucker, *supra* note 26, at 214.

<sup>64</sup> The Three Mile Island accident of 1979 was a partial core meltdown of the Three Mile Island Nuclear Generating Station in Dauphin County, Pennsylvania. It was the most significant accident in the history of the American commercial nuclear power generating industry, resulting in the release of an estimated 43,000 curies of radioactive krypton. See U.S. Nuclear Regulatory Commission Website, Backgrounder on the Three Mile Island Accident, <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html> (last visited Apr. 4, 2010).

<sup>65</sup> Newberry, *supra* note 5, at 46.

<sup>66</sup> Kearney & Stucker, *supra* note 26, at 216.

<sup>67</sup> *Id.* at 214–15.

<sup>68</sup> Chuang, *supra* note 1, at 2434.

available low-level radioactive waste disposal site in the country. Faced with an increasing amount of waste, South Carolina feared it would become the “nuclear dumping ground” for the rest of the country.<sup>69</sup> The governor soon announced that the Barnwell site would halve the amount of waste it received over the next two years and increase its disposal fees for low-level radioactive waste by 600%.<sup>70</sup> The governors of Nevada and Washington, afraid of being left with the waste previously sent to South Carolina, also threatened to increase prices and restrict access to disposal sites.<sup>71</sup>

#### IV. THE ROAD TO *NEW YORK V. UNITED STATES*, 1980–1992

##### A. *Low-Level Radioactive Waste Policy Act*

¶19 With low-level radioactive waste accumulating around the country and the looming possibility that the United States would be left with no disposal sites, Congress decided to take action.<sup>72</sup> Congress swiftly passed the Low-Level Radioactive Waste Policy Act of 1980 (Policy Act).<sup>73</sup> The Policy Act, based on a proposal authored by the disposal site states,<sup>74</sup> had two basic provisions. First, states were responsible for securing access to a disposal site.<sup>75</sup> This could be accomplished either by independently developing a site, or by forming an interstate compact with other states. Second, after January 1, 1986, the states with disposal sites would have the authority to restrict the use of their disposal sites to states within their compacts.<sup>76</sup>

¶20 States immediately rushed to form interstate compacts.<sup>77</sup> Although interstate compacts are not widely understood, they are a method of intergovernmental cooperation provided for in the Constitution,<sup>78</sup> and they have been utilized for over 200 years to regulate trade and commerce between the states.<sup>79</sup> Interstate compacts appeared to be an elegant solution to the low-level radioactive waste problem. For one, it was neither efficient nor practical for every state to develop a disposal site since, under a state compact, only one state in the compact would have to develop a low-level radioactive waste disposal site. Moreover, these interstate compacts allowed the states to work together without interference from the federal government, giving them the autonomy they perpetually requested.

¶21 Unfortunately, the Policy Act did not require any particular configuration for the compacts. States were left to grope and barter with their neighbors over endless

<sup>69</sup> Thomas O’Toole, *A Dump Closing Threatens to Halt Cancer Research*, WASH. POST, Oct. 24, 1979, at A1.

<sup>70</sup> Kearney, *supra* note 9, at 61.

<sup>71</sup> Gerrard, *supra* note 40, at 1081.

<sup>72</sup> Chuang, *supra* note 1, at 2432.

<sup>73</sup> Low-Level Radioactive Waste Policy Act (Policy Act) of 1980, Pub. L. No. 96-573, § 2189, 94 Stat. 3347 (codified at 42 U.S.C. § 2021b–2021d (1995)).

<sup>74</sup> See Kearney, *supra* note 9, at 60–61 (discussing how in testimony before Congress, the governors of the three host site states recommended that the national LLRW policy encompass two basic principles, which were then included in the Policy Act).

<sup>75</sup> Policy Act § 4(a)(1).

<sup>76</sup> Policy Act § 4(a)(2)(B).

<sup>77</sup> Kearney, *supra* note 9, at 61.

<sup>78</sup> U.S. CONST. art. I, § 10, cl. 3 (“No state shall, without the consent of Congress . . . enter into any Agreement or Compact with another State, or with a foreign power.”).

<sup>79</sup> Kearney & Stucker, *supra* note 26, at 210.



permutations of the compact arrangements.<sup>80</sup> By treating each state as an equal sovereign, the law posed a particular problem for states that generated little waste.<sup>81</sup> Discussing the plight of these states in later years, the Department of Energy noted:

Regardless of whether a State generates large amounts of low-level waste, or virtually none at all, the State must commit substantial resources to finding ways to dispose of its waste within the time period set forth in the Act. States that generate very small amounts of low-level waste continue to face legal, financial and political challenges disproportional to their contribution to the national waste management burden. For example, six unaffiliated States (Maine, New Hampshire, North Dakota, Rhode Island, South Dakota and Vermont) and the District of Columbia and Puerto Rico, shipped a total of 16,080 cubic feet of low-level waste for disposal in 1988. This represents about 1 percent of the total volume of waste shipped for disposal nationally.<sup>82</sup>

Despite the inherent difficulties posed by the compacting process, states understood that securing access to a disposal site was crucial. By 1984, thirty-six states had entered into eight compacts.<sup>83</sup>

¶22 With the interstate compacts in place, states embarked on the second phase of the Policy Act: developing a disposal site. Unfortunately, as the states soon realized, developing a low-level radioactive disposal site was going to be even more difficult than the compacting process. By 1985, only three of the interstate compacts had access to an operating disposal site. Not surprisingly, these were the compacts that formed around the original disposal sites in South Carolina, Nevada, and Washington. With the Policy Act's January 1st deadline less than six months away, thirty one states would soon have no assured outlet for their low-level radioactive waste. The original disposal site states, still hosting the only three operating facilities in the United States, did not want to accept the waste from these states and renewed their threats to restrict access to the disposal sites. Congress and the states were at a standstill yet again.

#### B. *Low-level Radioactive Waste Policy Amendments Act*

¶23 Congress, with the assistance of the National Governors Association (NGA), drafted a "transition package" to ensure access to the current sites while states completed the lengthy process required to develop new low-level radioactive waste disposal sites.<sup>84</sup> The result was the Low-Level Radioactive Waste Policy Amendment Act of 1985 (Amendments Act).<sup>85</sup> Similar to the Policy Act, under the Amendments Act each state

<sup>80</sup> Newberry, *supra* note 5, at 48.

<sup>81</sup> *Id.*

<sup>82</sup> *Id.* (quoting the U.S. DEP'T ENERGY, 1988 ANNUAL REPORT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PROGRESS 37 (1989)).

<sup>83</sup> Kearney & Stucker, *supra* note 26, at 216.

<sup>84</sup> Chuang, *supra* note 1, at 2435.

<sup>85</sup> Low-Level Radioactive Waste Policy Amendments Act (Amendments Act) of 1985, Pub. L. No. 99-240, 99 Stat. 1842 (1986) (codified as amended at 42 U.S.C. § 2021e (2006)).

was responsible for the disposal of its low-level radioactive waste.<sup>86</sup> It also encouraged states to enter into interstate compacts to provide for the establishment and operation of low-level radioactive waste sites.<sup>87</sup> The important difference between the two pieces of legislation was that Congress, reacting to criticism that the Policy Act was hasty and vague, included three provisions in the Amendments Act that established a variety of milestones, incentives, and penalties that made it increasingly costly to states that did not secure access to a low-level radioactive waste disposal site.<sup>88</sup>

¶24 The first provision offered monetary incentives. States with disposal sites could levy a surcharge for out-of-region waste which could be increased every few years.<sup>89</sup> One quarter of the surcharges collected were to be transferred to an escrow account held by the Secretary of Energy.<sup>90</sup> The Secretary would then partially reimburse all states that complied with the following deadlines: by July 1, 1986, states were required to either join a compact or indicate that they planned to “go it alone”;<sup>91</sup> by January 1, 1988, each state that joined a compact had to identify which state had been selected to host the low-level radioactive waste disposal site, announce where the site would be located, and develop a siting plan;<sup>92</sup> by January 1, 1990, each new disposal compact or single-state disposal site was required to file an application for an operational license.<sup>93</sup> States failing to meet the deadlines would not recover the money in the escrow account and could be assessed even greater surcharges for access to a disposal site.<sup>94</sup>

¶25 The second provision allowed host states to deny access to low-level radioactive waste disposal sites if certain milestones were not met. If a state missed either the July 1986 deadline or the January 1988 deadline by one year, or the January 1990 deadline at all, the Washington, Nevada, and South Carolina disposal sites could refuse to accept that states’ low-level radioactive waste.<sup>95</sup>

¶26 The third provision was the take-title provision at issue in *New York v. United States*. If a state was unable to develop or secure access to a disposal site by January 1, 1996, it would take-title to all low-level radioactive waste generated within its borders.<sup>96</sup> Taking-title meant that a state would take possession of all of the waste generated within its borders and become liable for all damages “directly or indirectly incurred by such generator or owner as a consequence of the failure to take possession.”<sup>97</sup> The take-title provision was thus a steep penalty because it forced state governments to manage the storage and disposal of low-level radioactive waste without the expertise and equipment of the generators. It also required states to accept legal liability for accidents, leaks, or

<sup>86</sup> 42 U.S.C. § 2021c (a)(1)(A) (2006).

<sup>87</sup> § 2021d (a)(2).

<sup>88</sup> Carol S. Weissert & Jeffery S. Hill, *Low-level Radioactive Waste Compacts: Lessons Learned from Theory and Practice*, PUBLIUS, Fall 2004, at 27, 35.

<sup>89</sup> See 42 U.S.C. § 2021e(d)(1) (providing that a disposal site state could charge as follows: in 1986 and 1987, ten dollars per cubic foot; in 1988 and 1989, twenty dollars per cubic foot; in 1990, 1991, and 1992, forty dollars per cubic foot of low-level radioactive waste).

<sup>90</sup> § 2021e(d)(2)(A).

<sup>91</sup> § 2021e(e)(1)(A).

<sup>92</sup> § 2021e(e)(1)(B)(i–ii).

<sup>93</sup> § 2021e(e)(2)(C).

<sup>94</sup> § 2021e(e)(2)(A), (B), (D).

<sup>95</sup> § 2021e(e)(2)(A), (B), (D).

<sup>96</sup> § 2021e(d)(2)(C).

<sup>97</sup> § 2021e(d)(2)(C).

any other of the host of harms that can accompany the transportation, storage, or disposal of low-level radioactive waste.

¶27 Congress hoped that this mix of incentives, milestones, and deadlines would encourage states to develop low-level radioactive waste disposal sites. Unfortunately, even with concrete deadlines and attractive incentives, states could not comply with the Amendments Act.

¶28 Compacts adopted a hybrid “public participation”<sup>98</sup> and “incentive”<sup>99</sup> model for siting waste disposal facilities that required input from the affected communities at all stages of the site’s development and tried to facilitate acceptance through incentives.<sup>100</sup> Unsurprisingly, communities across the country were not amenable to the proposition of a radioactive waste disposal site in their neighborhoods. This phenomenon is known as “not-in-my-back-yard” (NIMBY). NIMBY is not limited to environmental or “no-nuke” activists.<sup>101</sup> Rather, NIMBY activists are people who oppose disposal sites for diverse, but ostensibly deeply felt, reasons.<sup>102</sup> NIMBY sentiments are pervasive for all locally unwanted land-use decisions, including: airports, prisons, solid waste incinerators, and landfills.<sup>103</sup> However, NIMBY sentiments are “particularly vitriolic toward hazardous and radioactive waste.”<sup>104</sup> Responses to a word-association survey of attitudes toward a nuclear waste repository, for example, revealed “pervasive qualities of dread, revulsion, and anger.”<sup>105</sup>

¶29 States invested enormous amounts of time, effort, and money to pacify the strong NIMBY sentiments that quickly materialized at the mere mention of nuclear waste. New York, for example, offered prospective host communities a bundle of incentives worth an estimated two million dollars.<sup>106</sup> New York also promised to preserve open spaces and create local jobs.<sup>107</sup> Yet not one community was willing to let the state develop a low-level radioactive waste disposal site.

¶30 The concerns of NIMBY activists illustrate the difficulty of convincing a community to accept a process that is inherently inequitable.<sup>108</sup> Developing a low-level radioactive waste disposal site creates a burden on one community for the benefit of another.<sup>109</sup> As a result, regardless of the type of waste, communities oppose disposal sites. For example, plans to develop new municipal waste landfills spur, almost immediately, numerous legal challenges.<sup>110</sup> States dealing with low-level radioactive

<sup>98</sup> See Gerrard, *supra* note 40, at 1158 (describing the public participation model and explaining that the most common forms of participation are public hearings, citizen advisory boards, and membership on siting boards).

<sup>99</sup> See, e.g., Jay Romano, *Radioactive Waste? Nimby, Towns Tell State*, N.Y. TIMES, Jan. 29, 1995, at NJ1 (explaining that New York promised communities to preserve open spaces and create local jobs in return for the ability to develop a LLRW disposal site).

<sup>100</sup> See Chuang, *supra* note 1, at 2458 (describing the modern siting process as a mix of public participation and compensation schemes).

<sup>101</sup> Kearney, *supra* note 9, at 63.

<sup>102</sup> *Id.* at 63–64.

<sup>103</sup> *Id.* at 63.

<sup>104</sup> *Id.*

<sup>105</sup> Newberry, *supra* note 5, at 44.

<sup>106</sup> Romano, *supra* note 99, at NJ1.

<sup>107</sup> *Id.*

<sup>108</sup> Gerrard, *supra* note 40, at 1122–25.

<sup>109</sup> Chuang, *supra* note 1, at 2440.

<sup>110</sup> *Id.* at 2415–23 (discussing the many court cases that resulted from municipal waste siting).

waste, therefore, not only encounter the traditional opposition to waste sites, but also must overcome the stigma and fear that attaches to anything related to nuclear power or radioactive waste.

¶31 Unable to placate the NIMBY activists, and afraid that any announcement of a potential low-level radioactive waste disposal site would bring negative state-wide attention, state officials hoped that they could meet their obligations under the Amendments Act by incentivizing or bullying another compact member to host the disposal site. Relations in these compacts tended to be cooperative until one state was selected by the others to host the low-level radioactive waste disposal site.<sup>111</sup> At that point the state either dropped out,<sup>112</sup> was expelled,<sup>113</sup> or instituted litigation to enjoin the compact's decision.<sup>114</sup>

¶32 An example of inter-compact discord is Nebraska's litigation against the Central Midwest Compact (Midwest Compact). After it was selected to host a disposal site, Nebraska quickly commenced multiple lawsuits.<sup>115</sup> In *Nebraska v. Central Interstate Low-level Radioactive Waste Commission*, Nebraska claimed that the Midwest Compact did not have the authority to enforce a deadline for developing a disposal site.<sup>116</sup> Specifically, it disagreed with the decision of the Midwest Compact's governing committee to file an action to enforce the siting deadline.<sup>117</sup> The Eighth Circuit found for the Midwest Compact, but acknowledged that the only relief available was allowing the Midwest Compact to file an additional action to enforce Nebraska's obligations or revoking its membership.<sup>118</sup> The court pointed out that revoking a state's membership would be pointless because it did nothing to further the development of a disposal site,<sup>119</sup> and would thus be "akin to curing the disease by killing the patient."<sup>120</sup>

¶33 Nebraska requested that the Supreme Court review the Eighth Circuit's decision.<sup>121</sup> However, before the Supreme Court could grant or deny certiorari, Nebraska and the Central Interstate Compact Commission reached a court-approved settlement.<sup>122</sup> Nebraska agreed to withdraw its Supreme Court appeal and the Compact Commission agreed to file a "Satisfaction of Judgment" upon Nebraska's timely payment of a \$140.5

<sup>111</sup> Kevin M. Johnson, Note, *Waste Not, Want Not: Upholding the Integrity of Interstate Compacts*, 8 MO. ENVTL. L. & POL'Y REV. 18, 18–19 (2001).

<sup>112</sup> See Chuang, *supra* note 1, at 2454 (discussing how North Carolina withdrew from the Southeast Compact after it was unable to develop a disposal facility).

<sup>113</sup> Kearney, *supra* note 9, at 62; see AUDEEN W. FENTIMAN ET AL., OHIO STATE UNIV., RER-62, FACTSHEET: HISTORY OF THE MIDWEST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT, [http://ohioline.osu.edu/rer-fact/rer\\_62.html](http://ohioline.osu.edu/rer-fact/rer_62.html) (last visited Apr. 4, 2010) (discussing how Michigan was expelled from the Midwest Compact after it was selected as a host state and "failed to live up to its obligations").

<sup>114</sup> Johnson, *supra* note 111, at 23.

<sup>115</sup> *Id.*

<sup>116</sup> 187 F.3d 982 (8th Cir. 1999).

<sup>117</sup> *Id.* at 988.

<sup>118</sup> See *id.* at 986 (discussing how the Midwest Compact can either commence an action to enforce Nebraska's obligations or revoke its membership).

<sup>119</sup> Johnson, *supra* note 111, at 25.

<sup>120</sup> *Id.*

<sup>121</sup> NEB. DEP'T ENVTL. QUALITY, ANNUAL REPORT TO THE LEGISLATURE 78 (2004), available at [http://www.deq.state.ne.us/Publica.nsf/a9f87abbc29fa1f8625687700625436/149e36a9156f0512862570ca007e3652/\\$FILE/CH-8LLRW.pdf](http://www.deq.state.ne.us/Publica.nsf/a9f87abbc29fa1f8625687700625436/149e36a9156f0512862570ca007e3652/$FILE/CH-8LLRW.pdf).

<sup>122</sup> *Id.*

million dollar settlement.<sup>123</sup> Nebraska then terminated its membership in the Compact and closed its low-level radioactive waste program.<sup>124</sup>

¶34 By the early 1990s it was clear that compacts not affiliated with an original disposal site were not going to meet the deadlines imposed by the Amendments Act. States working together in compacts could still not overcome NIMBY protests. NIMBY protests made states reluctant to host sites, and, as the *Nebraska* court pointed out, inter-compact litigation cured the “disease” for the designated host state, but “killed the patient.” Years were wasted, thousands of dollars were spent, and many states were still no closer to developing low-level waste disposal sites.<sup>125</sup>

¶35 New York, a state that generated a relatively large share of the United States’ low-level radioactive waste,<sup>126</sup> was not going to meet the 1996 deadline.<sup>127</sup> After declining to join a compact, New York decided that it would comply with the Amendments Act by siting and financing a disposal facility within the state.<sup>128</sup> Like many states, New York formed a Low-level Radioactive Waste Siting Commission (N.Y. Commission) to oversee the siting process.<sup>129</sup> Each of the N.Y. Commission’s decisions were met by vociferous objections.<sup>130</sup> For example, when Williamsburg, New York was identified as an interim storage site, hundreds of angry residents protested outside city hall and the proposed storage site for days.<sup>131</sup> Opposition grew when New York announced five potential locations for a permanent low-level radioactive waste disposal site.<sup>132</sup> State officials soon realized that strong NIMBY sentiments would prevent New York from meeting the 1996 deadline. New York was stuck: theoretically, it should support the solution drafted by Congress and the NGA, yet state officials did not want to accept responsibility and liability for all of its low-level radioactive waste. In the end, state officials, concerned about the negative publicity that would result from developing a site and the ramifications of the take-title provision, decided to challenge the Amendments Act in court.<sup>133</sup>

<sup>123</sup> *Id.*

<sup>124</sup> *Id.* (“As a result of this agreement, the agency plans to close out its Low-Level Radioactive Waste Program Activities. The Department has not requested additional general funds to operate the program. In addition to activities related to program closeout, current Low-Level Radioactive Waste program staff have assumed other duties in the agency. One staff member will have a continuing role monitoring national low-level radioactive waste activities.”).

<sup>125</sup> See Johnson, *supra* note 111, at 19.

<sup>126</sup> New York v. United States, 505 U.S. 144, 154 (1992); see also U.S. Nuclear Regulatory Commission Website, Low-Level Waste Compacts, <http://www.nrc.gov/waste/llw-disposal/licensing/compacts.html> (last visited Apr. 4, 2010) (stating that New York generates seventy percent of U.S. LLRW).

<sup>127</sup> See Kearney, *supra* note 9, at 66 (describing the many difficulties encountered by New York when it attempted to site a low-level radioactive waste disposal facility, and how this, plus wide spread “citizen resistance,” led the state and two counties to file the law suit).

<sup>128</sup> New York, 505 U.S. at 154.

<sup>129</sup> Gary Pierre, *Neighborhood Report: Williamsburg; Breathing Easier After the Last Shipment of Radioactive Waste*, N.Y. TIMES, June 12, 1994, available at <http://www.nytimes.com/1994/06/12/nyregion/neighborhood-report-williamsburg-breathing-easier-after-last-shipment.html?pagewanted=1>.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.*

<sup>132</sup> Richard Weiner, New York v. United States: *Federalism and the Disposal of Low-Level Radioactive Waste*, 34 NAT. RESOURCES J. 197, 200 (1994).

<sup>133</sup> See generally Greenhouse, *supra* note 3, at 1.

V. *NEW YORK V. UNITED STATES*

¶36 In *New York v. United States*, New York alleged that the Amendments Act violated the Constitution's Tenth and Eleventh Amendments, the Due Process Clause of the Fifth Amendment, and the Guarantee Clause.<sup>134</sup> Connecticut, New Jersey, and fifteen other states filed or joined briefs on New York's behalf.<sup>135</sup> The states of Washington, Nevada, and South Carolina joined the federal government as defendants.<sup>136</sup> The District Court for the Northern District of New York dismissed New York's complaint.<sup>137</sup> The Court of Appeals for the Second Circuit affirmed the District Court's decision.<sup>138</sup> On appeal, New York limited its complaint to allege only violations of the Tenth Amendment and the Guarantee Clause.<sup>139</sup> The Supreme Court granted certiorari.<sup>140</sup> In a six-to-three decision, the Court held that the take-title provision of the Amendments Act violated the Tenth Amendment.<sup>141</sup>

¶37 The Court, in an opinion written by the steadfast states' rights advocate Justice O'Connor, began its analysis of the Amendments Act with the monetary-incentive provision.<sup>142</sup> States with disposal sites could impose a surcharge on low-level radioactive waste received from other states. Further, the Secretary of Energy could collect a portion of this surcharge and place it in an escrow account.<sup>143</sup> A percentage of these funds would be dispersed to states that achieved a series of milestones outlined in the Amendments Act.<sup>144</sup> According to the Court, moving waste from state to state was interstate commerce and Congress had the authority under the Commerce Clause to force states to charge a fee for accepting low-level radioactive waste from other states.<sup>145</sup> Similarly, relinquishing a portion of the surcharge to the Secretary of Energy was found to be permissible as a federal tax on interstate commerce.<sup>146</sup> Returning some of this money to states that achieved milestones was found to be a valid exercise of the Spending Clause: Congress may place conditions, such as attaining certain milestones, upon the receipt of federal funds.<sup>147</sup> According to the Court, the monetary-incentive provision was comparable to other permissible congressional actions, such as making a portion of federal highway funding contingent on a state raising the legal drinking age from eighteen to twenty-one.<sup>148</sup>

---

<sup>134</sup> 505 U.S. 144, 154 (1992).

<sup>135</sup> Greenhouse, *supra* note 3, at 1.

<sup>136</sup> *New York*, 505 U.S. at 154.

<sup>137</sup> *New York v. United States*, 757 F. Supp. 10, 10 (N.D.N.Y. 1990).

<sup>138</sup> *New York v. United States*, 924 F.2d 114, 115 (2d Cir. 1991).

<sup>139</sup> *New York v. United States*, 505 U.S. 144, 154 (1992). The Tenth Amendment to the U.S. Constitution provides that "the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." The Guarantee Clause of Article IV, § 4, cl. 1 of the U.S. Constitution provides that "[t]he United States shall guarantee to every State in this Union a Republican Form of Government."

<sup>140</sup> *New York*, 505 U.S. at 145.

<sup>141</sup> *See id.*

<sup>142</sup> *Id.* at 171.

<sup>143</sup> *Id.*

<sup>144</sup> *Id.*

<sup>145</sup> *Id.* at 176–77.

<sup>146</sup> *Id.* at 171.

<sup>147</sup> *Id.* at 173.

<sup>148</sup> *Id.* at 158 (citing *South Dakota v. Dole*, 483 U.S. 203, 207–08 (1987)).

¶38 The Court also upheld the Amendments Act's denial-of-access provision.<sup>149</sup> In this provision, Congress authorized states and regional compacts with disposal sites to gradually increase the fees for accepting low-level radioactive waste, eventually refusing to accept all out-of-state or out-of-compact waste from states that did not meet federal guidelines.<sup>150</sup> Similar to the monetary-incentives provision, the Court found support for this provision in the Commerce Clause.<sup>151</sup> Although New York claimed that this provision was merely a mechanism to force states to regulate low-level radioactive waste according to the federal program, the Court maintained that the provision provided states a choice.<sup>152</sup> States could either regulate the disposal of radioactive waste according to federal guidelines, or the state's generators of low-level radioactive waste would be prohibited from exporting the waste.<sup>153</sup> This was an acceptable exercise of the Commerce Clause because, unlike the impermissible take-title provision discussed below, the burden of non-compliance fell on those who generated the waste, not on the state as a sovereign.<sup>154</sup> Under this provision, a state that did not want to comply with the Amendments Act would not be forced to spend any money or participate in a federal program.<sup>155</sup>

¶39 While the previous two provisions of the Amendments Act were found to encourage states to provide low-level radioactive waste disposal sites, the Court held that the take-title provision violated the Tenth Amendment because it "crossed the line distinguishing encouragement from coercion."<sup>156</sup> The take-title provision provided that any state that did not develop a disposal site or join an interstate compact that had access to a site by January 1, 1996 became liable for all damages caused by the inability to export low-level radioactive waste.<sup>157</sup> Put simply, a state could either adhere to the milestones of the Amendments Act or accept ownership of all its low-level radioactive waste.

¶40 The Court found that the take-title provision provided two unconstitutional options that would "commandeer[] the legislative processes of the States by directly compelling them to enact and enforce a federal regulatory program."<sup>158</sup> First, Congress could not simply transfer the waste from the generators to the state government because "forced transfer, standing alone, would in principle be no different than a congressionally compelled subsidy from state governments to radioactive waste producers."<sup>159</sup> Second, Congress could not assign liability to the state for waste produced by non-governmental entities, which the Court noted "would be indistinguishable from an Act of Congress directing the States to regulate in a way that accepted the liabilities of certain state residents."<sup>160</sup> Thus, because both the instruction to state governments to take title and the

---

<sup>149</sup> *Id.* at 174.

<sup>150</sup> *Id.* at 173.

<sup>151</sup> *Id.* at 174.

<sup>152</sup> *Id.*

<sup>153</sup> *Id.*

<sup>154</sup> *Id.*

<sup>155</sup> *Id.*

<sup>156</sup> *Id.*

<sup>157</sup> 42 U.S.C. § 2021e(d)(2)(C) (2006).

<sup>158</sup> *New York*, 505 U.S. at 176 (citing *Hodel v. Va. Surface Mining & Reclamation Ass'n, Inc.*, 452 U.S. 264, 288 (1981)).

<sup>159</sup> *Id.* at 175.

<sup>160</sup> *Id.*

direct order to regulate were beyond the authority of Congress, “it follows that Congress lacks the power to offer the States a choice between the two.”<sup>161</sup>

¶41 This ruling, however, was not the end of the Amendments Act. According to the Court, the take-title provision was severable from the rest of the legislation, meaning it could be removed and the overall intent of the Amendments Act would still be intact.<sup>162</sup> As a result, the first two provisions of the Amendments Act continued, and continue, to guide states struggling with low-level radioactive waste. Pursuant to the Policy Act and the Amendments Act, a state has three options: (1) it can join an interstate compact that has access to an existing site, (2) it can join an interstate compact and, with the other states, try to develop a site, or (3) it can work independently to develop a site. States with disposal sites are allowed to levy surcharges and restrict or deny access to out-of-compact states.<sup>163</sup> However, without the take-title provision, if a state fails to develop a disposal mechanism, there is no penalty.<sup>164</sup> Without penalties, state officials have no motivation to risk the ire of NIMBY activists or enforce contentious interstate-compact decisions. *New York* may have reinvigorated the Tenth Amendment and represented “good federalism,”<sup>165</sup> but without a single new disposal site, it is now clear that it led to bad public policy.

#### VI. LOW-LEVEL RADIOACTIVE WASTE TODAY: *NEW YORK*’S FALL-OUT

¶42 The *New York* decision put the states in a predicament they have yet to resolve. States are required to find a solution to their low-level radioactive waste problem, but lack the tools necessary to overcome strong NIMBY protests or enforce interstate compact decisions. As a result, more and more states are turning to the most convenient solution available: forcing generators that are unable to pay for access to disposal sites to hold their waste in unofficial, makeshift storage facilities.

¶43 *New York*’s experience illustrates this dilemma. State officials’ first response to *New York* was to attempt to negotiate a regional compact with neighboring states.<sup>166</sup> When this failed, they tried to join an existing compact.<sup>167</sup> This effort was no more successful: other states were deterred by *New York*’s large volume of low-level radioactive waste and the negative iniquities that would result from joining a compact with a bigger and notoriously aggressive state.<sup>168</sup> With no possibility of access to a disposal site outside of the state, and NIMBY sentiments preventing the development of a disposal site within its borders, state officials were stuck, again.<sup>169</sup> *New York* decided

---

<sup>161</sup> *Id.* at 176.

<sup>162</sup> *Id.* at 186.

<sup>163</sup> 42 U.S.C. §§ 2021e(d)(1), 2021e(e)(2)(A–D) (2006).

<sup>164</sup> See Kearney, *supra* note 9, at 69 (discussing the impact of eliminating the take-title provision).

<sup>165</sup> *Id.* at 57.

<sup>166</sup> *Id.* at 65

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

<sup>169</sup> It was NIMBY and the inability to build a site that led to *New York v. United States*. See *id.* at 66 (explaining that after the public protests, demonstrations, civil disobedience, and “citizen resistance,” *New York* filed a lawsuit seeking to have the Amendments Act struck down).



that its only solution was to pass the responsibility of dealing with low-level radioactive waste to the generators.<sup>170</sup>

¶44 Currently, generators in New York have only two disposal options: they can ship their waste to an official disposal site at considerable expense, or they can store their waste onsite.<sup>171</sup> Neither option is sustainable. After the Barnwell, South Carolina site restricted access to members of its compact in 2008, the only site that will accept waste from New York is in Clive, Utah. Transporting low-level radioactive waste is very expensive and New York generators that choose this option must pay to ship their waste over 2250 miles.<sup>172</sup> All generators that cannot or will not pay for official disposal must store the waste on their premises or pay for interim storage. These makeshift storage facilities lack the proper oversight and safety features of an official site.<sup>173</sup> As a result, in 2008 alone, 191 generators of low-level radioactive waste in New York stored approximately 319,803 cubic feet of low-level radioactive waste in undisclosed locations.<sup>174</sup>

## VII. THE FUTURE OF LOW-LEVEL RADIOACTIVE WASTE

¶45 The most obvious solution to the problem of low-level radioactive waste disposal, eliminating or modifying the processes and procedures that create such waste, is unrealistic. Low-level radioactive waste is an inevitable by-product of essential medical and scientific research,<sup>175</sup> and continues to be produced in greater quantities.<sup>176</sup> Further, climate change concerns may lead to more nuclear power plants, which are considered relatively clean energy sources but which also generate low-level radioactive waste.<sup>177</sup>

¶46 As the quantity of low-level radioactive waste increases, the probability that it will be disposed of safely at an official site decreases. The few operating disposal sites consistently capitalize on the waste-disposal monopoly; over the last decade disposal fees have increased from \$40 per cubic foot to over \$300 per cubic foot.<sup>178</sup> As a result, states

<sup>170</sup> See *id.* at 69 (stating that after the *New York* decision the State of New York considered temporary storage facilities, but most states were expecting to force generators to store the waste indefinitely). New York also passed the The New York State Low-Level Radioactive Waste Management Act, which requires low-level radioactive waste generators in the state to submit annual reports to NYSERDA providing detailed information on waste generated, stored, and disposed. See N.Y. PUB. AUTH. LAW § 1854-d (1995).

<sup>171</sup> The reporting form for generators in New York has only two options: disposal or storage. See generally N.Y. STATE LOW-LEVEL RADIOACTIVE WASTE STATUS REPORT, *supra* note 5 (discussing the amounts of low-level radioactive waste generated in New York that was stored or disposed of in 2008).

<sup>172</sup> Author's calculation based on distance from New York City to Clive, Utah via highway.

<sup>173</sup> See Kearney, *supra* note 9, at 70 (explaining that unofficial storage sites could be damaged by natural disasters).

<sup>174</sup> See N.Y. STATE LOW-LEVEL RADIOACTIVE WASTE STATUS REPORT, *supra* note 5, at 17, 18.

<sup>175</sup> See Chuang, *supra* note 1, at 2432, 2434 (explaining that civilian low-level radioactive waste is mostly created through nuclear power, industrial research, and medical applications, and that lack of access to low-level radioactive waste disposal sites "prompted scares that valuable medical research would be stopped in its tracks").

<sup>176</sup> According to data provided by the three commercial low-level radioactive waste disposal facility operators, disposal volumes grew to about twelve million cubic feet in 2003, an increase of 200% over 1999. 2004 GAO REPORT: LOW-LEVEL RADIOACTIVE WASTE, *supra* note 24, at 4.

<sup>177</sup> See, e.g., Larry Rohter, *2 Endorsements of Nuclear Power, but Sharp Differences on Details*, N.Y. TIMES, Oct. 8, 2008, at A25 (noting that increased nuclear power was endorsed by both presidential candidates).

<sup>178</sup> Chuang, *supra* note 1, at 2455.

have no choice but to allow generators to store, rather than dispose of, low-level radioactive waste. This leads to low-level radioactive waste in warehouses, closets, and storerooms in research laboratories and nondescript buildings across the country.<sup>179</sup> These unofficial storage facilities lack the safety precautions and expertise of an official disposal site, greatly increasing the probability of accidents or contamination.<sup>180</sup>

¶47 The United States can address the low-level radioactive waste problem in three ways: (1) maintain the status quo with states controlling waste disposal, (2) return control to the federal government, or (3) establish a federal-state power-sharing arrangement within the confines of *New York*.

#### A. *Status Quo*

¶48 There is no need to revisit at length the arguments against maintaining the current low-level radioactive waste disposal system. States have failed to build a single new disposal site since the 1970s. The production of low-level radioactive waste each year exceeds the United States' disposal capabilities. There is an alarming trend of storing low-level radioactive waste in makeshift storage facilities.

¶49 Proponents of maintaining the status quo could suggest that, although slow, recent progress toward a new low-level radioactive waste disposal site in Texas supports the current system. In early 2009, Valhi Inc. announced that the Texas Commission on Environmental Quality (TCEQ) approved its license for a new disposal site in Andrews County, Texas.<sup>181</sup> Valhi noted that the Texas hospital system supported the Andrews County disposal site, which would be open to generators in Texas and Vermont,<sup>182</sup> because it would ensure that the “diagnosis, treatment and research of cancer and other life threatening diseases, which generate such wastes, can continue.”<sup>183</sup> According to the company:

This is an important milestone for . . . the people of Andrews and Lea Counties and the states of Texas and Vermont. . . . In addition to providing more than 75 new jobs at our Andrews County facility, this license will ensure that Texas and Vermont hospitals, universities, power plants and other enterprises will be able to continue operating with the knowledge that there is an assured solution for the permanent disposal of their [low-level radioactive waste].<sup>184</sup>

¶50 However, what the Valhi press release failed to mention is that this was not the first time TCEQ approved the development of a new low-level radioactive waste disposal site in Texas.<sup>185</sup> On at least two occasions, companies were forced to abandon potential

<sup>179</sup> Newberry, *supra* note 5, at 44.

<sup>180</sup> Philip Abelson, *Low-Level Radioactive Waste*, 268 SCIENCE 1547, 1547 (1995).

<sup>181</sup> Press Release, Valhi, Inc., Valhi, Inc. Announces Low-Level Radioactive Waste Disposal License Decision (Aug. 12, 2008), *available at* <http://www.static.istockanalyst.com/article/viewiStockNews/articleid/2506754>.

<sup>182</sup> U.S. Nuclear Regulation Commission, *Low-Level Waste Compacts*, <http://www.nrc.gov/waste/llw-disposal/compacts.html> (last visited Nov. 23, 2009).

<sup>183</sup> *Id.*

<sup>184</sup> Valhi, Inc., *supra* note 180.

<sup>185</sup> American Geological Institute, Government Affairs Program, Update and Hearing Summary on Low-

disposal sites when their announcement sparked community opposition and litigation.<sup>186</sup> In fact, since 1980, the State of Texas and private investors have spent more than \$1 billion in unsuccessful attempts to license, develop, and operate low-level radioactive waste disposal sites.<sup>187</sup>

¶51 Unsurprisingly, the plan to develop the Andrews County site also faces opposition. Andrews County residents are divided on the issue, and community organizations are already planning to protest.<sup>188</sup> The Sierra Club, an environmental non-profit, is investigating a legal appeal to TCEQ's decision.<sup>189</sup> In short, there is nothing to indicate that Valhi will be any more successful than its predecessors.<sup>190</sup>

### B. Federal Solution

¶52 The second option is to allow the federal government to control all aspects of low-level radioactive waste disposal. Federal responsibility for low-level radioactive waste is not a new proposition. In the 1950s, the Atomic Energy Act gave the federal government the sole power to regulate all phases of the nuclear fuel cycle, including the disposal of low-level radioactive waste.<sup>191</sup>

¶53 The federal solution would also fit within the confines of the *New York* decision. Justice O'Connor's opinion did not forbid the federal government from regulating low-level radioactive waste. In fact, Justice O'Connor affirmed that the Commerce Clause gives Congress this power.<sup>192</sup> Justice O'Connor struck down the take-title provision because it would "commandeer" the state governments for a federal purpose.<sup>193</sup> Placing responsibility solely with the federal government, however, would not make state officials accountable for the decisions of the federal government.

¶54 The problem with the federal solution is that states would immediately oppose any proposal that allowed for exclusive federal control of the siting and operation of a low-level radioactive waste disposal facility. Lobbying by state governments was a major factor in the federal government's decision to abandon the AEA, under which it controlled low-level radioactive waste disposal, for the Amendments Act, which provided for a federal-state power-sharing arrangement. State officials are understandably reluctant to let the federal government dictate the location of low-level radioactive waste disposal sites. State officials may also fear that relinquishing control over low-level

---

Level Nuclear Waste Disposal (Oct. 23, 1998), <http://www.agiweb.org/legis105/lownuke.html>.

<sup>186</sup> See American Geological Institute, Government Affairs Program, Low-level Radioactive Waste Update (Oct. 4, 1998), [http://www.agiweb.org/gap/legis107/lowlevel\\_waste.html](http://www.agiweb.org/gap/legis107/lowlevel_waste.html) (discussing the abandonment of potential sites in Fort Hancock and Sierra Blanca).

<sup>187</sup> *Id.*

<sup>188</sup> See *West Texas County to Vote on Funding Nuke Site*, DAILY FIN., May 7, 2009, <http://www.dailyfinance.com/rtn/ap/west-texas-county-to-vote-on-funding-nuke-site/rfid211319739/?channel=pf> (providing quotes from residents wary of supporting the site and community organizations planning to oppose the measure); Sarah Snyder, *WCS Disposal Site Stirs Controversy Among Environmentalists* (Apr. 30, 2009), [http://nukefreetexas.org/news\\_NewsWest9\\_043009.html](http://nukefreetexas.org/news_NewsWest9_043009.html) (discussing how environmental activists are printing up postcards, running ads, and holding meetings in protest to the site).

<sup>189</sup> *Texas Approves Nation's Largest Low-Level Radioactive Waste Site*, ENVTL. NEWS SERVICE, Jan. 14, 2009, <http://www.ens-newswire.com/ens/jan2009/2009-01-14-093.asp>.

<sup>190</sup> *Id.*

<sup>191</sup> Kearney, *supra* note 9, at 59. The AEA is discussed at length in Part III, *supra*.

<sup>192</sup> *New York v. United States*, 505 U.S. 144, 171 (1992).

<sup>193</sup> See *id.*

radioactive waste disposal sites will set a precedent for other contested siting processes, like landfills.<sup>194</sup> Thus, although constitutional, state opposition would likely prevent Congress from passing a law that gives the federal government complete control over the low-level radioactive waste disposal process.

### C. Federal-State Power-Sharing Arrangement

¶55 The third, and most promising, option is to continue the tradition of cooperation between the states and federal government. Working together, states and the federal government built low-level radioactive waste disposal facilities in the 1960s.<sup>195</sup> Congress and the states also supported the power-sharing arrangements in the Policy Act and the Amendments Act.<sup>196</sup>

¶56 Many believe that *New York* left the burden and responsibility of low-level radioactive waste disposal solely with the states and private generators.<sup>197</sup> However, the *New York* opinion only struck down one provision in the Amendments Act.<sup>198</sup> Justice O'Connor was clear: the federal incentives, penalties, or other provisions in any low-level radioactive waste legislation are unconstitutional only if the penalties are coercive.<sup>199</sup>

¶57 In fact, the *New York* decision referenced one power-sharing arrangement that has quite a bit of potential for addressing the current federal-state stalemate. According to Justice O'Connor, the federal government can place conditions on the receipt of federal funds.<sup>200</sup> The case Justice O'Connor used as precedent was *South Dakota v. Dole*.<sup>201</sup> In *Dole*, South Dakota challenged a federal law that directed Elizabeth Dole, then-Secretary of Transportation, to withhold a percentage of federal highway funds from states “‘in which the purchase or public possession . . . of any alcoholic beverage by a person who is less than twenty-one years of age is lawful.’”<sup>202</sup> The Court upheld the law under the Spending Clause’s broad grant of power to Congress.<sup>203</sup> Furthermore, the Court noted that “[w]e have also held that a perceived Tenth Amendment limitation on congressional regulation of state affairs did not concomitantly limit the range of conditions legitimately placed on federal grants.”<sup>204</sup> Thus, under *Dole*, the federal government could regulate low-level radioactive waste by making federal funds contingent on a state developing a disposal site.<sup>205</sup>

<sup>194</sup> Cf. Chuang, *supra* note 1, at 2444 (enumerating state concerns about out-of-state garbage and landfills).

<sup>195</sup> See Kearney & Stucker *supra* note 26, at 214 (discussing the AEA, which allowed states to enter into agreements to develop LLRW disposal sites; although the authors note that states “took the lead,” states worked in tandem with the federal government until the passage of the Policy Act in 1980).

<sup>196</sup> Kearney, *supra* note 9, at 60–61.

<sup>197</sup> *Id.* at 73.

<sup>198</sup> See *New York v. United States*, 505 U.S. 144, 187 (1992) (the take-title provision was severable from the rest of the Amendments Act).

<sup>199</sup> *Id.* at 166.

<sup>200</sup> *Id.* at 171.

<sup>201</sup> *Id.* (citing *South Dakota v. Dole*, 483 U.S. 203 (1987)).

<sup>202</sup> *Dole*, 483 U.S. at 205 (citing 23 U.S.C. § 158 (1982)).

<sup>203</sup> *Id.* at 206. The Spending Clause provides: “The Congress shall have Power To lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States; but all Duties, Imposts and Excises shall be uniform throughout the United States.” U.S. CONST. art. 1, § 8, cl. 1.

<sup>204</sup> *Dole*, 483 U.S. at 210.

<sup>205</sup> See *New York*, 505 U.S. at 145.

¶58 To encourage states to develop low-level radioactive waste disposal sites, Congress could mirror the provisions of the Amendments Act that the *New York* opinion already deemed to be legitimate regulations under the Commerce Clause and the Spending Clause. For example, Congress could offer incentives to states with disposal sites by allowing disposal facilities to continue to restrict access and increase fees for out-of-compact waste.<sup>206</sup> States with disposal sites could also continue to restrict access to those states within its interstate compact.<sup>207</sup> As low-level waste disposal became more expensive and difficult to secure, states without disposal sites would have an incentive to develop sites within the state or the various interstate compacts. Finally, instead of the take-title provision, Congress could offer additional federal grants, as discussed in *Dole*, that were contingent on states developing low-level radioactive waste disposal sites.<sup>208</sup>

¶59 A potential argument against relying on *Dole* is the Court's warning that, in some circumstances, financial incentives offered by Congress might pass the point at which "pressure turns into compulsion."<sup>209</sup> In other words, the more money the federal government offers, the closer the incentive becomes to coerced regulation.<sup>210</sup> The Court's caveat was not problematic in *Dole* because a state that refused to raise the legal drinking age to twenty-one lost only a relatively small percentage of certain federal highway funds.<sup>211</sup> On the other hand, states will likely require a significant financial incentive, well above five percent of federal highway funds, to develop low-level radioactive waste disposal sites.

¶60 There are two important differences between the coercive regulation mentioned in *Dole* and the proposed low-level radioactive waste incentive packages. First, states will have a meaningful choice whether or not to accept the financial package. Unlike the law in *Dole*, which sought compliance from each individual state, the federal government needs only a handful of states to develop low-level radioactive waste disposal sites. Congress will have no incentive to pressure those states that strongly oppose developing a low-level radioactive waste disposal site, giving states what Justice O'Connor found to be the "critical alternative"—the ability to decline the federal program.<sup>212</sup>

¶61 Second, one of the issues in *Dole* was that the law allowed the federal government to withhold federal highway funds from states that did not comply with the national drinking age.<sup>213</sup> In contrast, states that agree to develop a low-level radioactive waste disposal site will be eligible to receive additional funds. Thus, a state cannot claim that reliance on expected funds, already allocated to crucial programs in a forward-looking budgetary process, is coercing its participation in a federal program.<sup>214</sup> Rather the state

<sup>206</sup> See 42 U.S.C. § 2021e(d)(1) (2006).

<sup>207</sup> See § 2021e(d) & (f).

<sup>208</sup> See *South Dakota v. Dole*, 483 U.S. 203, 210 (1987) ("We have also held that a perceived Tenth Amendment limitation on congressional regulation of state affairs did not concomitantly limit the range of conditions legitimately placed on federal grants.").

<sup>209</sup> *Id.* at 211 (internal citation omitted).

<sup>210</sup> See *id.*

<sup>211</sup> *Id.*

<sup>212</sup> *New York v. United States*, 505 U.S. 144, 177 (1992).

<sup>213</sup> *South Dakota v. Dole*, 483 U.S. 203, 210 (1987).

<sup>214</sup> See *id.* at 211 (discussing what South Dakota stood to lose by refusing to participate in the national program).

would have the option to accept additional funding, and, as Justice O'Connor stated in *New York*, optional incentives are not coercive.<sup>215</sup>

¶62 The decisions in *Dole* and *New York* offer a potential solution: the federal government may offer states monetary incentives to take part in federal programs, providing that the incentives do not coerce participation. In addition, 2009's unique financial and political atmosphere makes financial incentives a plausible solution. The 2008 economic crisis left states with deficits in the hundreds of millions, or even billions, of dollars.<sup>216</sup> As state governments continually struggle to fill budgetary gaps, state officials are likely to be more amenable to federal programs that provide additional funding.

¶63 Widespread financial difficulties also provide state and federal officials with an opportunity to develop a low-level radioactive waste disposal site with support, rather than opposition, from the community. State officials are already making very unpopular decisions to increase tuition at public universities,<sup>217</sup> limit municipal services,<sup>218</sup> and raise taxes.<sup>219</sup> In light of these options, NIMBY activists and community leaders may see a low-level radioactive waste disposal site as a better, if not ideal, solution. With the highest unemployment rates in decades,<sup>220</sup> communities may even welcome the additional jobs created by the construction and maintenance of a low-level radioactive waste disposal site.

¶64 In previous years, the mere mention of a low-level radioactive waste disposal site would bring immediate, virulent protests.<sup>221</sup> However, by offering new jobs and economic growth, government officials could finally discuss the fears associated with and misconceptions about disposal sites with a receptive, if tentative, audience. For example, community activists are concerned that low-level radioactive waste disposal sites pose significant environmental and health risks.<sup>222</sup> They view disposal sites as huge industrial facilities that spew toxins into air, water, and food. In reality, low-level radioactive waste disposal sites bear a stronger resemblance to national parks than steel factories. Low-

<sup>215</sup> *New York*, 505 U.S. at 177.

<sup>216</sup> See, e.g., Howard Fisher, *Lawmakers Close in on Budget Deal*, ARIZ. DAILY SUN, Jan. 31, 2009, available at [http://www.azdailysun.com/articles/2009/01/31/news/20090131\\_front\\_190025.txt](http://www.azdailysun.com/articles/2009/01/31/news/20090131_front_190025.txt) (noting Arizona's 1.6 billion dollar deficit); Evan Halper, *Reducing California State Payroll a Daunting Task*, L.A. TIMES, Jan. 31, 2009, available at <http://www.latimes.com/business/careers/work/la-me-workers31-2009jan31,0,5991510.story> (discussing how California's projected budgetary shortfall will make paying state employees difficult); Jason Stein, *State Budget Crisis: Dwindling Revenues Clash with High Expectations For Services*, LACROSSE TRIB., Feb. 1, 2009, <http://www.lacrossetribune.com/articles/2009/02/01/news/z02budget01.txt> (predicting Wisconsin's budget shortfall to reach 5.4 billion).

<sup>217</sup> Tamar Lewin, *Regents Raise College Tuition in California by 32 Percent*, N.Y. TIMES, Nov. 19, 2009, at A26.

<sup>218</sup> Danny Hakim, *'On the Brink,' New York Must Cut, Paterson Says*, N.Y. TIMES, Nov. 10, 2009, at A26.

<sup>219</sup> See Karen Bouffard, *Students, Others Rally for Michigan School Funding*, DETROIT NEWS, Nov. 10, 2009, available at <http://m.detnews.com/detail.jsp?key=554699&full=1> (discussing Governor Granholm's financial plans, including a potential tax increase).

<sup>220</sup> Peter S. Goodman, *U.S. Unemployment Rate Hits 10.2%, Highest in 26 Years*, N.Y. TIMES, Nov. 6, 2009, at B1, available at <http://www.nytimes.com/2009/11/07/business/economy/07jobs.html>.

<sup>221</sup> See, e.g., Gary Pierre, *Neighborhood Report: Williamsburg; Breathing Easier After the Last Shipment of Radioactive Waste*, N.Y. TIMES, June 12, 1994, available at <http://query.nytimes.com/gst/fullpage.html?res=9C01EED7133AF931A25755C0A962958260&n=Top/Reference/Times%20Topics/Subjects/W/Waste%20Materials%20and%20Disposal>.

<sup>222</sup> Chuang, *supra* note 1, at 2439.

level radioactive waste disposal happens underground. Once a container is buried, it must be left undisturbed for thirty years. As a result, a low-level radioactive waste disposal site requires acres of undeveloped land.<sup>223</sup> Government officials could then explain that, although not without risk, developments in storage technology and modern environmental regulations have also removed many of the risks of leakage and groundwater contamination. They could also emphasize that the current system, which allows for hundreds if not thousands of unofficial, undisclosed, makeshift storage facilities throughout the state, poses a much greater risk to communities.

¶165 An effective education campaign combined with economic incentives has persuaded communities to accept other kinds of waste disposal sites. Tullytown, Pennsylvania, for example, welcomed a new landfill after discussions with government officials resulted in an agreement to infuse the old mining town's budget with \$48 million over fifteen years.<sup>224</sup> Arrangements like the deal negotiated in Tullytown benefit the states by allowing them to develop disposal facilities in areas with low land costs near sources of waste. The arrangements also benefit the communities by providing compensation for accepting the risks associated with hosting a disposal site.<sup>225</sup>

¶166 It is possible that generous incentive packages and well-presented educational campaigns will fail to overcome communities' reservations about hosting a low-level radioactive waste disposal site. However, 2008's economic crisis makes this solution more plausible than in the past. At worst, implementing a federal-state power-sharing arrangement will be an improvement on the status quo because it will prevent low-level radioactive waste from accumulating in multiple, undisclosed locations across the country, and it will reintroduce the problem of low-level radioactive waste disposal to policymakers. At best, this proposal will lead to mutually beneficial arrangements that result in the development of desperately needed low-level radioactive waste disposal sites, as well as the long-awaited resolution of the United States' low-level radioactive waste problem.

## VIII. CONCLUSION

¶167 The United States cannot continue to ignore its low-level radioactive waste problem. The amount of low-level radioactive waste currently exceeds the country's disposal capabilities, and valuable scientific research and the quest for clean energy will likely result in the production of even more waste. Working independently, state governments have not developed a single new disposal site for low-level radioactive waste. Congress' attempts to address the problem culminated in the Amendments Act almost fifteen years ago. All the while, low-level radioactive waste has continued to accumulate in thousands of undisclosed warehouses across the nation.<sup>226</sup>

¶168 Despite the thirty year stalemate, there are potential solutions to the United States' low-level radioactive waste problem. The most promising proposal is a new federal-state power-sharing arrangement. The economic crisis presents state and government officials with a unique opportunity to negotiate a mutually beneficial incentive package that

<sup>223</sup> 2004 GAO REPORT: LOW-LEVEL RADIOACTIVE WASTE, *supra* note 24, at 27.

<sup>224</sup> Rick Hampson, *Trash Provides 'Horn O'Plenty' for Towns*, USA TODAY, Sept. 29, 2003, at A15.

<sup>225</sup> TOM TIETENBERG, ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS 499–500 (5th ed. 2000).

<sup>226</sup> *Id.*

allows for the development of desperately needed disposal sites, while providing states and local communities with additional funds and new jobs. Although this solution might not successfully overcome the traditionally strong community opposition to waste disposal sites, it does complete the first step: to reintroduce the low-level radioactive waste problem and highlight the pressing need for a solution.